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APPENDIX B

TO FACILITY OPERATING LICENSE NO.
LIMERICK GENERATING STATION, UNITS 1 AND 2

PHILADELPHIA ELECTRIC COMPANY
DOCKET NOS. 50-352 AND 50-353

ENVIRONMENTAL PROTECTION PLAN
(NON-RADIOLOGICAL)

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1.0 Objectives of the Environmental Protection Plan

This Environmental Protection Plan (EPP) is to provide for protection of the environment during operation of Limerick Generating Station Units 1 and 2 (LGS). The principal objectives of the EPP are as follows:

- (1) Verify that the station is operated in an environmentally acceptable manner, as established by the Nuclear Regulatory Commission (NRC) in the Final Environmental Statement (FES) for LGS.
- (2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

Environmental concerns identified in the FES which relate to water quality matters are regulated by way of Philadelphia Electric's (licensee's) National Pollutant Discharge Elimination System (NPDES) permit.

2.0 Environmental Protection Issues

In the FES, the NRC considered the environmental impacts associated with the operation of LGS. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

Specific aquatic issues raised by the NRC in the FES were:

- (1) The need for aquatic monitoring programs to confirm that thermal mixing occurs as predicted, that chlorine releases are controlled within those discharge concentrations evaluated, and that effects on aquatic biota and water quality of the Delaware and Schuylkill Rivers and the East Branch and mainstem of the Perkiomen Creeks due to plant operation are no greater than predicted.
- (2) The need for special studies to document levels of intake entrainment (Delaware, Perkiomen, Schuylkill) and impingement (Schuylkill only).

See subsection 4.2-1 for aquatic monitoring requirements.

2.2 Terrestrial Issues

The only unresolved terrestrial issues raised by the NRC in the FES was maintenance of transmission lines.

NRC conditions with regard to terrestrial issues are specified in Subsections 4.2.2 and 4.2.3 of the EPP.

2.3 Noise Issues

(1) Point Pleasant Pumphouse

The NRC staff evaluated the impacts of noise on nearby residents from four sources associated with the Point Pleasant pumphouse. Only noise radiated from the two 7.5-MVA transformers was judged to be audible at nearby residences.

(2) Bradshaw Reservoir Pumping Station

The staff evaluated impacts of noise from both the pumphouse and the two transformers associated with the Bradshaw Reservoir pumping station. Noise from pumphouse intake ventilation louvers was judged audible at nearby residences utilizing the present design. However the ventilators can be modified using attenuators which will ensure inaudibility of these noises at the residences in question.

(3) Limerick Site

The staff evaluated noise impacts at Limerick from operation of the two cooling towers and ten transformers and judged that monitoring and mitigative action, if necessary, should be undertaken.

Noise monitoring programs are discussed in 4.2.4.

3.0 Consistency Requirements

3.1 Plant Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such changes, tests or experiments do not involve an unreviewed environmental question, and do not involve a change in the Environmental Protection Plan. Changes in plant design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 3.3 are not subject to the requirements of this section.

Before engaging in construction or operational activities which may affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. (Activities are excluded from this requirement if all measureable non-radiological effects are confined to the on-site areas previously disturbed during site preparation and construction.) When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor

Regulation. When such activity involves a change in the Environmental Protection Plan, such activity and change to the Environmental Protection Plan may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3.

A proposed change, test, or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FES, supplements to the FES, or in any decisions of the Atomic Safety and Licensing Board (ASLB); or (2) a matter not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of change in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include a written evaluation which provides bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question nor constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of his Annual Environmental Operation Report (per Subsection

5.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests and experiments.

3.2 Reporting Related to the NPDES Permits and State Certifications

Violations of the NPDES Permit or the State certification (pursuant to Section 401 of the Clean Water Act) shall be reported to the NRC Region I Office in King of Prussia, PA by submittal of copies of the reports required by the NPDES Permit or State 401 certification. The licensee shall also provide the NRC Region I Office with copies of the 316(b) documentation at the same time it is submitted to the permitting agency.

Changes and additions to the NPDES Permit or the State certification shall be reported to the NRC Region I Office within 45 days following the date the change is approved by the State. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 45 days following the date the stay is granted. (If the 45th day falls on a weekend or a holiday, the report shall be made no later than the first working day following.)

The NRC shall be notified of changes to the effective NPDES Permit proposed by the licensee by providing NRC Region I Office with a copy

of the proposed change when it is submitted to the permitting agency. The notification of a licensee-initiated change shall include a copy of the requested revision submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES Permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, or local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any observed occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to plant operation shall be recorded and reported to the NRC Region I Office within 24 hours after becoming aware of the occurrence. This report should be made by telephone, telegraph, or facsimile transmission followed by a written report per Subsection 5.4.2. (If a significant environmental event occurs over weekends or holidays the report shall be supplied within 24 hours of the first working day following the weekend or holiday.) The following are examples: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, unusual fish kills, and increase in nuisance organisms or conditions.

No routine monitoring programs are required to implement this condition.

4.2 Environmental Monitoring

4.2.1 Aquatic Monitoring

The certifications and permits required under the Clean Water Act provide mechanisms for protecting water quality and, indirectly, aquatic biota. The NRC will rely on the decisions made by the Commonwealth of Pennsylvania, under the authority of the Clean Water Act, for any requirements for monitoring.

4.2.2 Terrestrial Monitoring

No terrestrial monitoring is required.

4.2.3 Maintenance of Transmission Line Corridors

The use of herbicides within the Limerick Generating Station transmission line corridors (Limerick to Cromby, Cromby to Plymouth Meeting, Cromby to North Wales, and Limerick to Whitpain) shall conform to the approved use of selected herbicides as registered by the Environmental Protection Agency and approved by State authorities and applied as directed on the pesticide label.

Records shall be maintained by the Licensee's Electric Transmission and Distribution Department concerning herbicide use. Such records shall include the following information: commercial and chemical names of materials used; concentration of active material in formulations for field use; diluting substances other than water; rates of application; method of application; location; and the date of application. Such records shall be maintained for a period of 5 years from the date they are prepared and shall be made readily available to the NRC upon request. There shall be no routine reporting requirement associated with this condition.

4.2.4 Noise Monitoring

4.2.4.1 Point Pleasant Pumphouse

A recent ASLB ruling (ASLB, 1983) requires that the licensee conduct a one-time field study after the transformers are placed in operation at Point Pleasant. If audible tones are found at the site boundary, the licensee will implement noise reduction measures (e.g., installation of barriers around the transformers). The noise shall be reduced to a level so that the transformer core tones will be inaudible at the site boundary as defined below. Based on onsite measurements, the delta L(ex) for each tone will be determined. If those values are greater than 5 dB, mitigative measures will have to be undertaken.

The measurement program required in the ASLB ruling involves determining, for each transformer tone, the number of dB (if any) above the threshold of audibility defined by the masking level for that tone. The masking level is defined as 16 dB above the ambient spectrum level. The steps to be carried out are:

- (1) Measure the broadband (nontonal) ambient nighttime (midnight to 4 a.m.) levels in all octave bands of frequency when the transformers are not energized (step A in the ASLB ruling).

From these, tone-masking sound levels (thresholds of audibility) at each tone frequency will be calculated.

(2) Measure the level of the tones that exist when the transformers are energized (step B) in the one-third-octave bands that contain them for comparison with the calculated masking levels from step A to determine audibility.

Transformer tones may be 5 dB above the masking level for specific one-third octave bands.

If, for any reason, it is not practicable to de-energize the transformers at any time during the prescribed measurement time period (midnight to 4 a.m.), alternative measurements will be required. In that event, only one measurement of the entire spectrum need be made, but it must be done entirely in one-third-octave bands. Any measured octave band sound level that includes a tone or tones cannot be used to determine the true background ambient sound level for that octave band. In such cases, the background ambient level in any one-third-octave band containing a tone will be approximated by interpolating between those adjacent one-third-octave band levels that do not contain any tones.

If audible tones are found at the site boundary, mitigative measures will be undertaken. The mitigative measures might involve the use of a three-sided barrier or a full enclosure.

4.2.4.2 Bradshaw Reservoir

The operational measurement program to be applied to the Point Pleasant Pumping Station is appropriate for the Bradshaw environment as well. In addition, to characterize the potential for complaints that are likely to occur if the transformer tones exceed the masking levels at the tonal frequencies by greater than 5 dB, the noise measurements proposed for the Point Pleasant site should be made at the Bradshaw pumphouse site boundary while energized, on the line between the transformers and residences B, D, and F, to determine if the tones would be audible at those points (see Figure 5.6, LGS Final Environmental Statement, p. 5-140). Measures to render these tones inaudible at these points will then be applied as necessary.

The measurement program recommended for Bradshaw to test for audible tones from the transformers should also be extended to include audible tones in the 1000-Hz octave band at the southeast site boundary in the direction of residence B.

4.2.4.3 Limerick Site

The operational measurement program to be applied to Pt. Pleasant area is appropriate for the area immediately beyond the northern boundary of the Limerick site as well. If audible tones are found to be present at the northern site boundary after Unit 1 transformers are energized mitigative measures will be taken, as required for the Bradshaw Reservoir, to cause those tones to be inaudible.

4.2.4.4 General Conditions for Noise Monitoring

The selection, calibration and use of equipment, conduct of the noise surveys, and the analysis and reporting of data shall conform to the provisions of the applicable American National Standards Institute standards.

The results of the surveys conducted under this program shall be summarized, interpreted and reported in accordance with Section 5.4.1 of this EPP.

The final report of this program shall present a brief assessment by the licensee of the environmental impact of plant operation on the offsite acoustic environment, and shall describe the proposed

mitigative measures, if any, to be taken to reduce the impact of plant noise levels on the off-site environment. This report shall also contain a list of all valid, written noise-related complaints or inquiries received by Philadelphia Electric Company concerning the Limerick Generating Station during the first year of operation subsequent to issuance of the operating license for Unit 1 and Unit 2. The report shall include a description of the action taken by PECO to resolve these complaints or inquiries. A valid complaint is defined as one received from a local resident who objects to the noise level in or adjacent to his residence.

5.0 Administrative Procedures

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the Environmental Protection Plan. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organization structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records and logs relative to the environmental aspects of plant operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to the NRC on request.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained for the life of the plant. All other records, data and logs relating to this EPP shall be retained for five

years from the date they are prepared or, where applicable, in accordance with the requirements of other agencies.

5.3 Changes in Environmental Protection Plan

Request for change in the Environmental Protection Plan shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the Environmental Protection Plan.

5.4 Plant Reporting Requirements

5.4.1 Routine Reports

An Annual Environmental Operating Report describing implementation of this EPP for the previous year shall be submitted to the NRC Offices of Inspection and Enforcement and Region 1 prior to June 1 of each year. The initial report shall be submitted prior to June 1 of the year following issuance of the full power operating license for Unit 1. The period of the first report shall begin with the date of

issuance of the full power operating license for the first operational unit.

The report shall include summaries and analyses of the results of the environmental protection activities required by Subsection 4.2 of this Environmental Protection Plan for the report period, including a comparison with preoperational studies such as those reported in the Environmental Report-Operating License, operational controls (as appropriate), and previous nonradiological environmental monitoring reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of trends towards irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of action to alleviate the problem.

The Annual Environmental Operating Report shall also include:

- (a) A list of EPP noncompliances and the corrective actions taken to remedy them.

- (b) A list of all changes in station design or operation, tests, and experiments made in accordance with Subsection 3.1 which

involved a potentially significant unreviewed environmental issue.

(c) A list of nonroutine reports submitted in accordance with Subsection 5.4.2.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

5.4.2 Unusual or Important Event Reports

A written report shall be submitted to the NRC Region 1 Office within 22 working days of occurrence of an unusual or important event. The report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operation characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC Region 1 Office shall be provided a copy of such report at the same time it is submitted to the other agency.